UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO.
09/841,282	04/24/2001	Noritaka Mochizuki	1232-4709	6033

27123 7590 11/06/2002

MORGAN & FINNEGAN, L.L.P.
345 PARK AVENUE
NEW YORK, NY 10154

EXAMINER
THOMPSON, TIMOTHY J

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.	Applicant(s)	
09/841,282	MOCHIZUKI, NORITAKA	
Examiner	**Art Unit**	
Timothy J Thompson	2873	

Offic Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-10,13,14,17 and 18* is/are rejected.

7)☒ Claim(s) *3-5,11,12,15 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 6, 9, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Takeda et al.6,438,282 B1).

Regarding claim 1, Takeda discloses an optical modulation element capable of forming a reflective diffraction grating in which heights of a plurality of elements each having a reflecting surface periodically change(fig 42, and col 42 lines 20-38), wherein the reflecting surfaces(fig 42, 32) of at least one of the plurality of elements are driven in a direction of height by piezoelectric elements(fig 42 99).

Regarding claim 2, Takeda discloses wherein the plurality of elements each having the reflecting surface are two-dimensionally arrayed by juxtaposing long sides(fig 42 and fig 6a).

Regarding claim 6, Takeda discloses wherein when the reflecting surfaces(fig 42, 32) of the plurality of elements are substantially flush with each other(fig 42), reflecting surfaces act as a flat mirror as a whole(with all of the cells "on", the reflectives surfaces will all be placed against the layer 20 which would essentially function as a mirror).

Regarding claim 9, Takeda discloses wherein pixels each formed from the plurality of elements are a ranged in a two-dimensional array(fig 6).

Regarding claim 13, Takeda discloses wherein pixels each formed from the plurality of elements are arranged in a two-dimensional array(fig 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al.6,438,282 B1) as applied to claim 1 above.

Regarding claim 7, Takeda et al., as detailed in claim rejection 1 above does not disclose of the elements is a strip-shaped element having a width of about 5 um. It would have been an obvious matter of design choice to make the element in strip shape

of a width of about 5um, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al.6,438,282 B1) as applied to claim 1 above.and further in view of Venkateswar et al.(U.S. Patent No. 5,490,009)

Regarding claim 10, Takeda et al., as detailed in claim rejection 1 above, does not disclose a video signal is used to drive the display. However, Venkateswar et al. discloses a video signal is used to drive a display using a micro-mirror(col 3, lines 45-55). It would have been obvious to one skilled in the art at the time of the invention ot use a video signal as shown by Venkateswar et al., in the micro-mirror display of Takeda et al., since as shown by Venkateswar et al., video signals are commonly used in micro-mirror displays for driving the mirrors to form the desired image.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al.6,438,282 B1), as applied to claim 6 above,.and further in view of Venkateswar et al.(U.S. Patent No. 5,490,009)

Regarding claim 17, Takeda et al., as detailed in claim rejection 6 above does not disclose a video signal is used to drive the display. However, Venkateswar et al. discloses a video signal is used to drive a display using a micro-mirror(col 3, lines 45-55). It would have been obvious to one skilled in the art at the time of the invention ot

use a video signal as shown by Venkateswar et al., in the micro-mirror display of Takeda et al., since as shown by Venkateswar et al., video signals are commonly used in micro-mirror displays for driving the mirrors to form the desired image.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al.6,438,282 B1) as applied to claim 9 above.and further in view of Venkateswar et al.(U.S. Patent No. 5,490,009)

Regarding claim 18, Takeda et al., as detailed in claim rejection 9 above, does not disclose a video signal is used to drive the display. However, Venkateswar et al. discloses a video signal is used to drive a display using a micro-mirror(col 3, lines 45-55). It would have been obvious to one skilled in the art at the time of the invention ot use a video signal as shown by Venkateswar et al., in the micro-mirror display of Takeda et al., since as shown by Venkateswar et al., video signals are commonly used in micro-mirror displays for driving the mirrors to form the desired image.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 states "an interval between adjacent

elements is minimized as much as possible". This is a subjective limitation which cannot be quantified. Additionally, claim 14 is rejected since it depends from claim 8.

Allowable Subject Matter

Claims 3-5, 11, 12, 15 and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The important features being the voltage is adjustable to change the intensity of the light or the polarities of the electric fields are alternatively different.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Thompson whose telephone number is (703) 305-0881. If the examiner can not be reached his supervisor, Georgia Epps, can be reached on (703) 308-4883.